

1 ***To the definitions and Abbreviations clauses, add:***  
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3 **General Link (GLK):** (From IEEE Std 802.11ak) Communication between two stations (STAs) over the  
4 wireless medium suitable for use as a link in the middle of an IEEE Std. 802.1Q conformant network.  
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6 ***These headers are here to provide targets for cross-references:***  
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9 **11.1 Service primitives and parameters**  
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11 **11.2 Status parameters**  
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13 **11.3 Point-to-point parameters**  
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16 ***I suggest changing the paragraph in subclause 11.1 beginning, “The***  
17 ***mac\_service\_data\_unit” as follows:***  
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20 The **mac\_service\_data\_unit** parameter is the service user’s data. This parameter allows the transmission of  
21 the MAC Service user data between MAC Service users, without modification by the MAC Service 5  
22 provider. The MAC Service user may transmit any integral number of octets greater than zero, up to a limit  
23 determined by the MAC Service provider. The value of this limit is made available to the MAC Service user  
24 by the use of management facilities or prior knowledge. The **mac\_service\_data\_unit** is Length/Type  
25 encoded, meaning that its first two octets contain either the number of [user data](#) octets [following the length](#)  
26 [field](#) in the **mac\_service\_data\_unit** (and are immediately followed by an LLC protocol identifier), or an  
27 EtherType.  
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29 ***I suggest adding a new Clause 12 before the existing Clause 12, renumbering the***  
30 ***existing Clause 12 and subsequent clauses as necessary:***  
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33 **12. PDU and protocol discrimination and media**  
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35 As described in IEEE Std 802-2014 Clause 9, some media (e.g., IEEE 802.11) employ LLC Protocol  
36 Discrimination (LPD) and some media (e.g., IEEE 802.3) employ EtherType Protocol Discrimination  
37 (EPD) as the primary means for identifying the protocol that defines the format of the data parameter in their  
38 service definitions corresponding to the ISS’s **mac\_service\_data\_unit** parameter. On LPD media, the first  
39 three or four octets of the data are the destination and source Logical Service Access Point identifiers  
40 (LSAPs) and one or two Control octets (hence, “LLC”) that together identify the protocol. On EPD media,  
41 either the first two octets are the length of the user data in the frame, which is then followed by a three-  
42 or four-octet LLC that identifies the protocol, or the first two octets are an EtherType that identifies the  
43 protocol.  
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45 Since the ISS is Length/Type encoded, a Media Access Method Dependent Convergence Function (see  
46 Clause 13) for a medium employing EPD need not transform the data parameter when mapping to or from  
47 the ISS. The following sections describe the transformations required of a medium employing LPD.  
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49 NOTE—The following subclauses identify malformed data parameters. See Clause 13 for actions to be taken in the  
50 event that malformed data parameters are detected.  
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## 12.1 M\_UNITDATA.request data transformation for LPD media

The following procedure is used to convert an ISS `mac_service_data_unit` parameter, which is Length/Type encoded, to the data parameter of a medium emplying LPD.

- a) If the value of the first two octets of the ISS `mac_service_data_unit`, treated as a 16-bit binary number (with the first octet being the most significant), are in the range hexadecimal 0000–05DC (decimal 0-1500), inclusive, then they constitute a Length field. In that case:
  - 1) The Length field is removed from the `mac_service_data_unit`, reducing its size by 2 octets.
  - 2) If the Length field is less than the number of octets remaining in the `mac_servcie_data_unit`, then the `mac_service_data_unit` can optionally be truncated, from its last octets, to the length contained in the (removed) Length field.
  - 3) If the Length field is greater than the number of octets remaining in the `mac_servcie_data_unit`, then the `mac_servcie_data_unit` is malformed.
- b) Otherwise, if the first two octets of the ISS `mac_service_data_unit` are equal to the value of the LLC encapsulation EtherType in Table 13-1), then that EtherType is removed from the `mac_service_data_unit`, reducing its size by 2 octets.
- c) Otherwise, if the first two octets of the ISS `mac_service_data_unit` are in the range hexadecimal 0600–FFFF (decimal 1536-4095), inclusive, and are not the value of the LLC encapsulation EtherType in Table 13-1, then the six octets hexadecimal AA-AA-03-00-00-00 are inserted before those first two octets (an EtherType), thus increasing the size of the `mac_service_data_unit` by 6 octets.

The steps taken to convert the Length/Type encoded ISS `mac_service_data_unit` with a Length/Type value in the range hexadecimal 05DD-05FF, inclusive (decimal 1501-1535) are undefined by this standard. Implementations are know that discard such frames, that treat the Length/Type value as a length, and that treat the Length/Type value as an EtherType.

## 12.2 M\_UNITDATA.indication data transformation for LPD media

The following procedure is used to convert the data parameter of a medium emplying LPD to an ISS `mac_service_data_unit` parameter, which is Length/Type encoded:

- a) If the first six octets of the data parameter of the specific media access method are hexadecimal AA-AA-03-00-00-00, then those six octets are removed from the data parameter to form the ISS `mac_service_data_unit`, thus reducing its size by 6 octets. If any of the following conditions then exists, the data parameter is malformed:
  - 1) The remaining `mac_service_data_unit` is less than 2 octets in length; or
  - 2) The first two octets of the remaining `mac_service_data_unit`, treated as a 16-bit binary number (with the first octet being the most significant), are less than or equal to hexadecimal 05DC (decimal 1500); or
  - 3) The first two octets of the remaining `mac_service_data_unit` contain the value of the LLC encapsulation EtherType in Table 13-1.
- b) Otherwise, if the length of the data paremter of the specific media access method is 1500 decimal or less, then that length is prepended to the data as a two-octet binary integer, with the first octet being the most significant, to form the ISS `mac_service_data_unit`.
- c) Otherwise (the first six octets are not AA-AA-03-00-00-00 and the length of the data parameter is 1501 decimal or larger), the LLC encapsulation EtherType shown in Table 13-1 is prepended to the data to form the ISS `mac_service_data_unit`.

NOTE—Without the LLC encapsulation EtherType, the Length of an indication with more than 1500 octets of data could be, and of an indication with more than 1536 octets would be, mistaken for an EtherType

**Table 13-1—LLC encapsulation EtherType**

Assignment	Value <sup>a</sup>
LLC encapsulation EtherType	XX-XX

- a. This value will be assigned  
(and this footnote removed)  
at the completion of Working Group balloting.

## 12.3 Tags in end stations

The result of the conversion rules specified in 12.1 and 12.2, when applied consistently by IEEE Std 802.1Q bridges, is that the data parameters with one or more inserted tags are identical for the service interfaces for both LPD media and EPD media, except for the encoding of the very first tag (or the data, if no tag is present). That is, the first tag (or the user data, if no tag) is LPD encoded on LPD media, and Length/Type encoded on EPD media, and all subsequent tags (and the user data, if there is at least one tag) is Length/Type encoded

For this reason, end stations that transmit tagged frames on LPD media should encode only the outermost tag (or the user data, if no tag) using LPD, and use Length/Type for all remaining tags (or the user data, if any tags are present), and should expect the same format on receipt.

*Suggested changes for Clause 13 (was clause 12) follow in [insert/strikeout](#).*

## 13. Media Access Method Dependent Convergence Functions

### 13.2.4 IEEE 802.11 parameter mapping

When an ISS M\_UNITDATA.request primitive is received, the IEEE 802.11 convergence function (13.2.1, 13.2.2, or 13.2.3) generates a corresponding IEEE 802.11 MA-UNITDATA.request or IEEE 802.11 DS-UNITDATA.request as follows:

- a) The destination\_address, source\_address, priority, and frame\_check\_sequence parameters are passed verbatim as the destination address, source address, priority, and frame check sequence parameters, respectively.
- b) The M\_UNITDATA mac\_service\_data\_unit parameter is ~~passed verbatim as~~ [mapped to](#) the MA-UNITDATA or DS-UNITDATA data parameter [according to 12.1](#).
- c) The ISS M\_UNITDATA drop\_eligible, service\_access\_point\_identifier, and connection\_identifier parameters are ignored.

NOTE—Drop eligibility is a capability defined in IEEE Std 802.11aa. However, it is not represented in the M\_UNITDATA service interfaces.

- d) The IEEE 802.11 MA-UNITDATA or DS-UNITDATA routing information parameter is null.
- e) The value of the IEEE 802.11 MA-UNITDATA or DS-UNITDATA service class parameter is QoSack.

When an IEEE 802.11 MA-UNITDATA.indication or DS-UNITDATA.indication primitive is received, the IEEE 802.11 convergence function (13.2.1, 13.2.2, or 13.2.3) generates a corresponding ISS M\_UNITDATA.indication as follows:

- 1 a) The destination address, source address, priority, and frame check sequence parameters are passed  
2 verbatim as the destination\_address, source\_address, priority, and frame\_check\_sequence  
3 parameters, respectively.
- 4 b) The MA-UNITDATA or DS-UNITDATA data parameter is ~~passed verbatim as~~ mapped to the  
5 M\_UNITDATA mac\_service\_data\_unit parameter [according to 12.2](#).
- 6 c) The ISS M\_UNITDATA drop\_eligible parameter is False.
- 7 d) The ISS M\_UNITDATA service\_access\_point\_identifier and connection\_identifier parameters are  
8 null.
- 9 e) The IEEE 802.11 MA-UNITDATA or DS-UNITDATA routing information and service class  
10 parameters are ignored.

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